conversion from temperature to kelvin

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Temperature

0	=	-273.15
Kelvin		Degree Celsius

Formula 0**K** − 273.15 = -273.1**°C**

More info Feedback

People also ask

How to convert temperature to Kelvin formula?

How do I convert Celsius to Kelvin?

How do you convert C to F easily?

Is Celsius to Kelvin 273.15 or 273?

AI Overview

The exact value for converting Celsius to Kelvin is **273.15**, though **273** is often used as a rounded shortcut.

1. Identify the Exact Conversion Formula

The official SI unit conversion requires the decimals to maintain exact scientific accuracy.

$$\mathrm{K} = {}^{\circ}\mathrm{C} + 273.15$$

2. Identify the Approximation Formula

In many introductory chemistry or physics classes, teachers use a simplified version to make mental math quicker.

$$\mathrm{K} \approx {}^{\circ}\mathrm{C} + 273$$

Comparison of Real-World Benchmarks

The slight difference impacts how specific benchmarks align on the scale: CK-12 Foundation +1

Temperature Milestone	Using Precise Value (273.15)	Using Rounded Value (273)
Absolute Zero	$-273.15\ ^{\circ}\mathrm{C}$	$-273\ ^{\circ}\mathrm{C}$
Freezing Point of Water	$0\ ^{\circ}\mathrm{C} = 273.15\ \mathrm{K}$	$0\ ^{\circ}\mathrm{C} = 273\ \mathrm{K}$
Boiling Point of Water	$100\ ^{\circ}\mathrm{C} = 373.15\ \mathrm{K}$	$100\ ^{\circ}\mathrm{C} = 373\ \mathrm{K}$

When to Use Each

places anyway. Quora +2

Final Answer

The officially correct and precise value is **273.15**, while **273** is an acceptable rounding shortcut for simple math problems.

Are you working on a **specific science homework problem**, or trying to determine the correct number of **significant figures** for a calculation?

Quora
Should I add 273 or 273.15 to convert to kelvin. My teacher...
When converting Celsius to Kelvin, you should add 273.15. The formula is: K = °C + 273.15 You...

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What is the equation for converting Celsiu...
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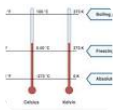
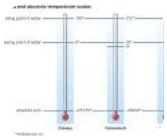


Wik
Abs... Wi...
The Kel... that ab...

Why is 273 called absolute zero?

AI Overview

Absolute zero is called **-273.15°C** (or about -273) because it is the exact temperature where a gas's volume theoretically shrinks to zero under Charles's law, marking the absolute physical limit. At this point, atoms reach their lowest possible energy state and thermal motion nearly stops. Reddit · r/askscience +3



The Science Behind the Number

- **Gas Behavior:** Early experiments by scientists like Joseph Louis Gay-Lussac showed that gases contract by about 1/273 of their volume for every degree Celsius temperature drops. Wikipedia +1
- **The Math Limit:** If you cool a gas down by 273.15 degrees, the volume and pressure mathematically drop to zero. You cannot go any colder because no more heat energy remains to be removed. Reddit · r/askscience +3
- **Absolute Scale:** Lord Kelvin used this fixed bottom limit to create the Kelvin temperature scale, setting absolute zero as **0 K**, which sits 273.15 units below 0°C.

Reddit
Why is −273.15° Celsius Absolute Zero? What...
Absolute Zero Definition: Absolute zero, equivalent to ...

Wikipedia
Absolute zero - Wikipedia
Charles's law. From 1787 to 1802, it was determined by...

Ved
Why... zer...
Zero ke... and cal...

Why is 273 added to Celsius?

AI Overview

You add 273 (specifically 273.15) to a Celsius temperature to convert it into Kelvin. This offset exists because the Celsius scale sets 0°C at the freezing point of water, while the Kelvin scale starts at absolute zero (0 K), which is the coldest possible temperature where molecular motion stops and sits at −273.15°C. Vedantu +1

Scale Differences

- **Celsius Scale**: Based on the properties of water ($0^{\circ}C$ is freezing, $100^{\circ}C$ is boiling).

Why is 0 Kelvin impossible?

AI Overview

Show more

Does water freeze at 273.15 K?

How long could a human survive in absolute 0?

Why is Kelvin 273 more than Celsius?

Is 273 C the coldest temperature?

Can we reach 1 Kelvin?

What if Earth dropped to absolute zero for 5 seconds?

Has anyone ever achieved 0 Kelvin?

What is the coldest thing in the universe?

Calculator Soup
https://www.calculatorsoup.com › Converters

Celsius to Kelvin | °C to K

Aug 1, 2025 — Celsius °C to Kelvin K Formula. **K equals °C plus 273.15**. K = °C + 273.15. How to Convert Celsius to Kelvin. Read more

Wikipedia
https://en.wikipedia.org › wiki › Conversion_of_scales_...

Conversion of scales of temperature

Kelvin Temperature conversions from **Kelvin** to **Kelvin** Celsius x K ≡ (x − 273.15) °C x °C ≡ (x + 273.15) K Fahrenheit x K ≡ (x × 9/5 − 459.67) °F x °F

National Institute of Standards and Technology (.gov)
https://www.nist.gov › pml › owm › si-units-temperature

SI Units – Temperature | NIST

Temperature Conversion (Exact) permalink ; Fahrenheit (°F), °F · (°F - 32) / 1.8 ; Celsius (°C), (°C * 1.8) + 32, °C ; **Kelvin** (K), (K - 273.15) * 1.8 + 32, K - ... Read more

Celsius is equal to 273.15. The **temperature** T in **Kelvin** (K) is equal to the **temperature** T in degrees Celsius (°C) plus 273.15: T(K) = T(°C) + 273.15

chemteam.info
https://www.chemteam.info › Convert-Celsius-Kelvin

Converting between Celsius and Kelvin

You can convert between Celsius and Kelvin like this: Kelvin = as an 'idiot indicator.' chemistry knows the true conversion value is **273.15**, but the decimal ...

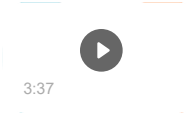
SensorsONE
https://www.sensorsone.com › kelvin-conversion-table-...

Kelvin Temperature Conversion Table for 0K to 1000K

Look up a temperature from 0 to 1000 Kelvin (K) to convert it to degrees Celsius (°C), Fahrenheit (°F) or Rankine (°R). Read more

Study.com
https://study.com · Jun 13, 2021

Interconverting Whole Degree Temperatures in Celsius ...



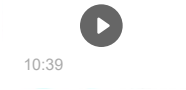
We will use the conversion formula for converting Kelvin to Celsius, which is **C = K − 273.15** . Plugging in the given temperature of 287 K as K, we get ...

ostermiller.org
https://ostermiller.org › calc › temperature

Temperature Conversion: Convert between Celsius, Kelvin ...

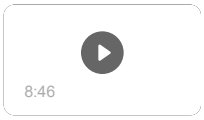
A temperature converter that uses significant figures and **can display scientific notation** when converting between the three major scales: kelvin, fahrenheit ...

Videos



How to convert Temperatures - Fahrenheit to Kelvin and ...

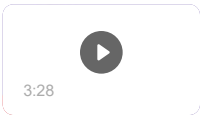
YouTube · Medicosis Perfectionalis
Oct 9, 2024



Temperature Conversions: Kelvin, Celsius and Fahrenheit

YouTube · Step by Step Science
Mar 8, 2022

7 key moments in this video



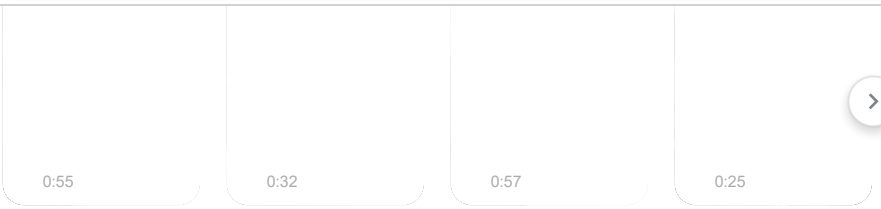
Celsius to Kelvin Temperature Conversion | The Easy Way

YouTube · Quoc Dat Phung
Oct 31, 2020

To **convert** Celsius to **Kelvin**, add 273.15 to the Celsius **temperature**. For **Kelvin** to Celsius, subtract 273.15 from the **Kelvin temperature**.

View all

Short videos



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